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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,944	12/19/2001	Jun Ohmura	02-068	8655

23400 7590 04/04/2003

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RESTON, VA 20190

EXAMINER

NGUYEN, TRAN N

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 04/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/020,944	<b>Applicant(s)</b> OHMURA ET AL.	
	<b>Examiner</b> Tran N. Nguyen	<b>Art Unit</b> 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All   b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> . | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Claim Rejections - 35 USC § 112***

2. Claims 7-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**Among claims 7-12**, the degrees of the displacement are not specifically recited as a mechanical or an electrical degree. In light of the specification, the angle of displacement is understood to be measured in mechanical degrees.

**In claims 7-8**, "displacement angle is 202.5 degrees" appears to be a typing error, should it be 22.5 mechanical degrees.

Appropriate corrections are required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1, 3-4, 6 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey et al (US 5,986,366) in view of Kim (US 5,861,700) and Kloster et al (US 5,142,178).

Bailey discloses a core of a motor (figs 1-3) substantially as the claimed invention, particularly each core sheets having a plurality of stays (36), at least two adjacent core sheets of



the core sheets are displaced one after the other by a predetermined displacement angle in a circumferential direction of the core in such a manner that the stays of one of the at least two adjacent core sheets are partially overlapped with the stays of the other one of the at least two adjacent core sheets, respectively, and the slots of the one of the at least two adjacent core sheets are aligned with the slots of the other one of the at least two adjacent core sheets in the axial direction of the core, respectively; and the stays of the core sheets are arranged at a predetermined angle shifting from one another to form a staircase-shaped guide walls and circumferentially spaced from each other and spirally extend in the axial direction of the core while maintaining the alignment of the slots thereof.

Bailey differs from the claimed invention only in the following respects:

(a) each core sheet including *an inner annular portion* so that the stays connect the inner annular portion to the outer annular portion, so that each adjacent two stays of the core sheet define a window opening therebetween;

(b) *each core sheet further includes at least one projection, at least one recess and a receiving portion, wherein at least one projection arranged in the first axial end surface of the other one of the at least two adjacent core sheets is entirely received in a corresponding one of the receiving portion and the at least one recess arranged in the second axial end surface of the one of the at least two adjacent core sheets, so that the first axial end surface of the other one of the at least two adjacent core sheets closely contacts the second axial end surface of the one of the at least two adjacent core sheets.*

Regarding the limitations of subsection (a), Bailey discloses each stay (36) having convex tip (39) for directly engaging with the shaft (12) instead of the stays connecting the outer annular core portion with an inner annular core portion to engage with the shaft.

Kim, however, teaches a laminated core for a motor, wherein the laminated core having each core sheet including an inner annular portion; the stays (14) connect the inner annular portion to the outer annular portion, so that each adjacent two stays of the core sheet define a window opening therebetween (fig 2). Kim teaches that the inner circular core portion with circular aperture (13) is for fitting the shaft therein. The inner circular core portion would provide firm attachment support for the shaft and the core. Furthermore, the Examiner takes Official Notice that motor cores, each respectively having an inner annular portion; the stays

connect the inner annular portion to the outer annular portion, so that each adjacent two stays of the core sheet define a window opening therebetween, are well known in the art (see cited references: US Patents: 5861700, 4642502, 5760520, 4841186, and JP Patent 03-60855 for support evidences of this statement.)

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the Bailey's motor core by configuring the core with inner annular portion so that the stay connecting the inner annular portion to the outer annular portion, so that each adjacent two stays of the core sheet define a window opening therebetween, as taught by Kim. Doing so would provide stronger support and attachment between the shaft and the core; also, because such core design is well known in the art.

Regarding the limitations of subsection (b), Kloster, however, teaches a motor laminated core, wherein each core sheet further includes plural projections (8) and plural recesses (9), each of which is located axially opposite to each respective projection, and a receiving portions (7), which is configured as through holes, which are all arranged along a concentric circle that is concentric to a rotational axis of the rotatably shaft of the motor, wherein the at least one projection is arranged in a first axial end surface of the core sheet, and the at least one recess and the receiving portion are arranged in a second axial end surface of the core the second axial end surface of the one of the at least two adjacent core sheets is opposed to the first axial end surface of the other one of the at least two adjacent core sheets, and each one of the at least one projection arranged in the first axial end surface of the other one of the at least two adjacent core sheets is substantially, entirely received in a corresponding one of the receiving portion and the at least one recess arranged in the second axial end surface of the one of the at least two adjacent core sheets, so that the first axial end surface of the other one of the at least two adjacent core sheets closely contacts the second axial end surface of the one of the at least two adjacent core sheets (figs 1-2).

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the Bailey motor core by embodying each laminated core sheet with projections and recesses as well as receiving portions and arranging two adjacent core sheets so that at least one projection entirely received in a corresponding one of the respective receiving portion and the at least one recess arranged in the second axial end surface of the one of the at least two



adjacent core sheets, so that the first axial end surface of the other one of the at least two adjacent core sheets closely contacts the second axial end surface of the one of the at least two adjacent core sheets, as taught by Kloster. Doing so would enable the lamination process for the core without any separately formed additional attachment parts.

Regarding the method claimed language of claim 13, "stacking the core sheets" which is the counter part of the structure claimed language thereof. One skilled in the art would have the necessary mechanical skills to realize the method of forming the core with detail structure disclosed as in the combination of the prior art refs in this rejection. Furthermore, the method claim 13 is actually considered as a product-of-process claim, i.e., it is still a product claim because there is no detail of sequential fabricating step(s) in the method of making the core, but rather the structural limitations of the core of stacking process.

4. **Claims 5, 7 and 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey, Kim, and Kloster, as applied in the rejection against the base claim, and further in view of level of ordinary skills of a worker in the art.

The combination of **Bailey, Kim, and Kloster** refs substantially discloses the claimed invention, except for the added limitations of claims 5, 7 and 9.

Regarding the added limitations of the receiving portion of each core sheet is a blind hole, and a portion of the first axial end surface of the core sheet, which opposes the blind hole in the axial direction of the core, is flat, as in claim 5.

Kim teaches the recesses and the receiving portions, which are through holes for accommodating bolts therein for attachment. Thus, those skilled in the art would realize that by applying Kim's teaching of providing recesses and holes therein for attachment, an artisan would have the necessary mechanical skills to modify the size and shape, in this case the types of holes, i.e., either a through hole or blind hole, for an appropriate attachment of the core sheets as attachment of the laminated core to other parts of the motor.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the core by embodying the receiving portions of each core sheet as a blind hole. Doing so would enable the core attachment and it has been held that a change in size or shape is

generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955) (emphasis added).

Regarding the limitation of the core having a number of the teeth of each core sheet is sixteen; a number of the stays of each core sheet is seven; and the predetermined displacement angle is 22.5 degrees (as understood in claim 7), or the predetermined displacement angle is defined by the following equation: the predetermined displacement angle = (360 degrees - the angular interval of the teeth/a number of the stays), as in claim 9.

Bailey generally discloses the core having a plurality of stays being arranged overlapping one another in a stairstep-shaped at a predetermined displacement angle. Those skills in the art would realize that, by applying the essential teaching of Bailey, an artisan would have the necessary skills in the art to calculate the number of stays and the angle of displacement based on the number of poles and stay of the core because motor cores are configured with different sizes, a small laminated core, i.e., a laminated core with a small diameter and a short axial length, then the number of teeth and the number stays would be less than a large laminated core, i.e., a laminated core with large diameter and long axial length.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the core by configuring the number of core teeth and the number of stays, as in the claimed invention, because it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges, in this case the numbers of core teeth, and number of stays, as well as the range of the displacement angle, involves only routine skill in the art. *In re Aller*, 105 USPQ 233 (emphasis added).

#### *Allowable Subject Matter*

Claims 8, 10-12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Application/Control Number: 10/020,944  
Art Unit: 2834

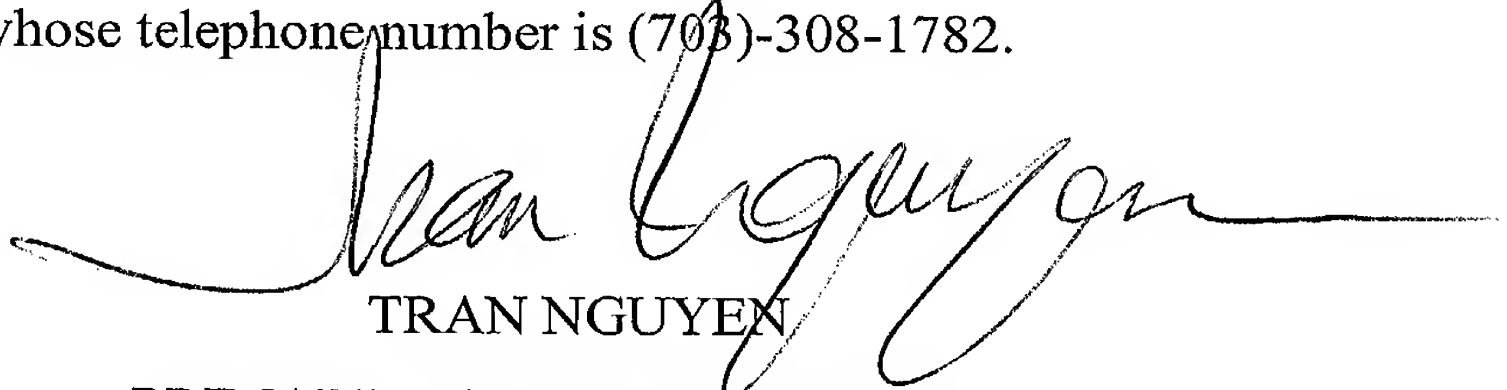
Page 7

***Communication***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tran N Nguyen whose telephone number is (703) 308-1639. The examiner can normally be reached on M-F 6:00AM-2:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703)-308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-3431 for regular communications and (703)-395-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-1782.



TRAN NGUYEN

PRIMARY PATENT EXAMINER

TC-2800